

UN Sustainable Development Goals in Environmental Assessment practice

A Danish standard

2023



Colophon

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UN Sustainable Development Goals in Environmental Assessment practice

The UN Sustainable Development Goals (SDGs) were implemented in 2016 by 193 UN member states and have since then created a vision and frame for sustainable development. The SDGs consist of 17 overall goals, 169 targets and 232 unique indicators. The goals approach social economic and environmental sustainability in a broad sense and addresses some of the same environmental parameters as addressed in environmental assessment (EA). In the figure below, the environmental parameters are linked to SDGs 1-16, while SDGs 16 and 17 are linked to the process of EA itself, including participation of the public. EA contributes actively to reaching the SDGs through its integration of environmental consideration in planning and project development.

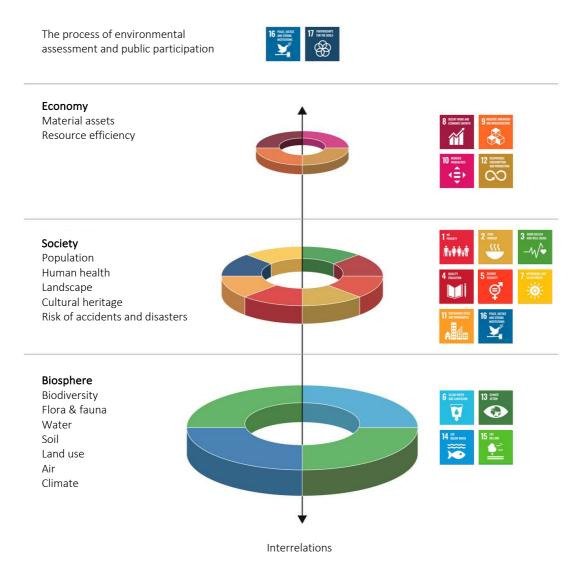


Figure 1 The link between SDGs and environmental assessment.



The SDGs are directed towards global and national application. Therefore, not all 169 targets are relevant for Danish plan- and project development and, in that case, EA on a more regional and local level.

For this reason, an application in a Danish context requires a systematic selection of those targets that are relevant for EA and its environmental parameters. The purpose of this report is to highlight which targets are relevant in a Danish EA practice and to link them to relevant environmental topics.

The selection of relevant SDGs is performed for the 169 targets because this level is determined to be most beneficial in terms of applying the goals in a Danish EA practice. The overall 17 goals are determined to be too broad. The 17 SDGs often regard a national level and are therefore not easily applied to local contexts, where they are often too general or unspecified.

Several of the 169 targets can be linked directly to the environmental parameters addressed in EA legislation. Other targets address topics outside of the legislation's environmental parameters.

In order to promote a more sustainable development, attention to the targets that are not currently addressed directly in an EA could contribute to expanding the scope of environmental parameters used in the practice.

The relevant targets are selected by a group of experts within EA practice, consisting of consultants, project developers and researchers¹. Every target was individually discussed within the expert group. Firstly, it was determined whether the target was relevant for the Danish geography – including neighboring countries in the case of transboundary EAs in Denmark. Provided that the target was relevant to bring into a Danish context, it was afterwards determined whether the target can be impacted by the construction or operation phases of a project or plan, and thereby covered by the EA legislation for environmental impact assessment (EIA) of projects or strategic environmental assessment (SEA) of plans, programs, and policies.

In all, 57 targets are considered relevant for EA². These targets cover 16 SDGs.

The relations between the UN SDGs and the environmental topics were established by the same group of experts. The 57 targets were again individually discussed and linked to one or more relevant environmental topics.

This guide presents the selected targets, divided according to the 16 SDGs, as well as an exemplification of how the targets can be relevant in an EA on plan and/or project level. The examples are a mix of types of activities, various impacts, and mitigation measures. There is a cross-reference table at the end of the report that links the SDGs to the environmental factors.

The provided examples for how the targets can be relevant in Denmark is not an exhaustive list but are merely examples of how the targets could potentially be impacted by a plan and/or project.

² The text for the individual targets is cited from <u>www.un,org/sustainabledevelopment/</u>



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¹ COWI, Rambøll, Copenhagen Metro, Aalborg University



1.2: By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions.



1.5: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.

Examples from EA

- Demolition of social housing for vulnerable and low-income groups.
- Settlement options for different population groups when building new homes of similar ownership types.
- Workplaces for people with no or short education.
- Climate-related incidents for population groups living in areas at risk of, for example, flooding.
- Energy burden for low-income households as a result of rising energy costs.



1.b: Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gendersensitive development strategies, to support accelerated investment in poverty eradication actions.

 People's opportunities for employment when moving workplaces to or from economically weak areas.







End hunger, achieve food security and improved nutrition and promote sustainable agriculture.



2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.

- Soil compaction that prevents the penetration of oxygen and water through the soil.
- Production of biomass for renewable energy with the risk of soil extraction.
- Inclusion of agricultural land for other purposes (i.e., urban development).
- Planning for particularly valuable agricultural areas.



3 GOOD HEALTH AND WELL-BEING

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Ensure healthy lives and promote well-being for all at all ages.



3.3: By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases.

Examples from EA

 Spread of infectious diseases through, for example, the handling of wastewater and drinking water.



3.4: By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and wellbeing.

- The importance of city parks and suburban areas for mental health.
- People's access to nature in connection with project areas.



3.6: By 2020, halve the number of global deaths and injuries from road traffic accidents.

 Road safety and deaths when establishing construction projects and when planning new roads.



3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.

- Pollution of particulate matter with significance for increased risk of lung diseases, blood clots and cancer.
- Noise exposure with significance for increased risk of, for example, dementia and cardiovascular diseases.
- Use and management of chemicals in projects.







Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.



4.a: Build and upgrade education facilities that are child, disability, and gender sensitive and provide safe, nonviolent, inclusive, and effective learning environments for all.

Environmental parameters: Population, human health.

- Location of noisy and polluting infrastructure in relation to existing educational institutions.
- Physical access to educational institutions for all users via, for example, bicycle paths or handicap ramps.





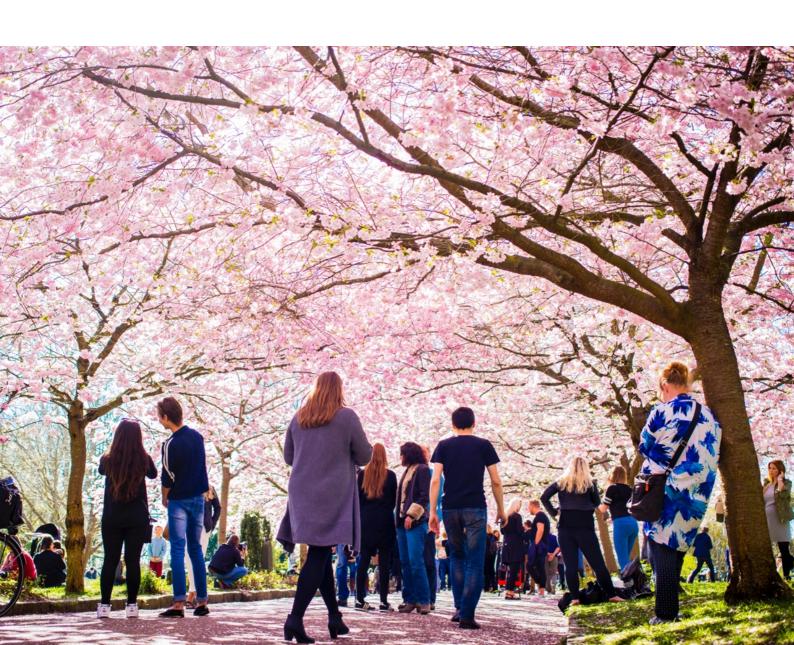


Achieve gender equality and empower all women and girls.



5.2: Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation.

- Organization of public spaces that provide security and safety for users (for example, through good lighting and visibility).
- Activation of the ground floor in buildings when arranging workplaces.





Ensure availability and sustainable management of water and sanitation for all.





6.1: By 2030, achieve universal and equitable access to safe and affordable drinking water for all.

Examples from EA

- Impact on the quantity and quality of the groundwater resource.
- Security of drinking water supply through, for example, maintenance, renovation, and safety cables.



6.3: By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.

- Discharge of chemicals and pollutants when managing wastewater.
- Seepage of rainwater with risk of groundwater contamination.
- Sewerage of developed areas, including summerhouse areas.



6.4: By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.

- Reduction of drinking water consumption.
- Utilization of rainwater through LUR (Local Utilization of Rainwater).
- Recirculation of wastewater.



6.6: By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aguifers, and lakes.

- Inclusion of lakes.
- Significance of occupancy and sewerage for surface water and groundwater formation.
- Restoration of watercourses.
- Underpassing of watercourses for new construction projects.





Ensure access to affordable, reliable, sustainable, and modern energy for all.





7.1: By 2030, ensure universal access to affordable, reliable and modern energy services.



7.2: By 2030, increase substantially the share of renewable energy in the global energy mix.



7.3: By 2030, double the global rate of improvement in energy efficiency.

- Changes in energy supply (electricity, heat, and fuels) with, for example, renewable power plants.
- Expensive relocation of cables, wires, and pipes triggered by a project.
- Transition to an increased share of electricity in energy consumption.
- Allotment of land for renewable energy in the event of land use change.
- · Planning of energy islands.
- Design, methods, and technology for energy efficiency incorporated into plans and projects.
- Energy efficiency in industrial energy consumption.









Examples from EA



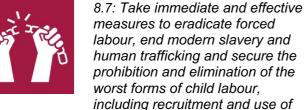
8.4: Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead.

- Resource consumption related to the choice of materials.
- Prevented waste of resources such as water and energy.



8.6: By 2020, substantially reduce the proportion of youth not in employment, education or training.

- Employment effects as a result of, for example, pollution, disturbances, improved mobility or changed land use.
- Possibility of major construction projects affecting the youth's employment or education.



- Construction work and resource consumption, which, for example, supports child labor in developing countries.
- Compliance with applicable rules and standards (social working conditions).



8.8: Arbejdstagernes rettigheder skal beskyttes og et sikkert og stabilt arbejdsmiljø for alle arbejdstagere skal fremmes, herunder for migrantarbejdere, især kvindelige migranter, og dem i usikre beskæftigelsesforhold.

child soldiers, and by 2025 end child labour in all its forms.

Compliance with applicable social working environment conditions.





8.9: By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products.

- Supporting the use of local labor and local resources.
- Transport needs connected to tourism, which reduces climate effects and other environmental impacts.
- Planning for tourism activity in rural areas, coastal areas and in areas with protected nature.





Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.





9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.

Examples from EA

- Access to infrastructure and transport services for urban and rural development.
- Infrastructure development that supports sustainable business development.
- Climate protection of existing and new infrastructure.



9.2: Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries.

- Planning and conditions that support better opportunities for industrial production.
- Placement of test centers for industry-specific business areas, for example, PtX and wind turbines.



9.4: By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.

- Efficient resource and energy consumption with reduced CO2 emissions during construction and operation of infrastructure.
- Infrastructure that supports the exchange of resources and waste products between companies.





Examples from EA



10.1: By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average.

 Plans and projects' social effects on the population's income.



10.3: Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies, and action in this regard.

- Inequalities that are created by impacts on population groups.
- Distribution of compensation in local areas with, for example, new windfarms.



11 SUSTAINABLE CITIES AND COMMUNITIES

Make cities and human settlements inclusive, safe, resilient, and sustainable.





11.1: By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums.



11.2: By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.



11.3: By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.



11.4: Strengthen efforts to protect and safeguard the world's cultural and natural heritage.

Examples from EA

 Access to housing for all population groups regardless of personal income as a result of, for example, the share of rental or social housing.

- Traffic safety when diverting bicycle routes.
- Access to/from public transport with, for example, the construction of new transport systems and urban development.
- Mobility in sparsely populated areas.
- Design of transport facilities that meet the specific needs of vulnerable groups.
- Varied housing types with changes to land use.
- Distribution of housing types and forms of ownership that promote social integration and prevents the formation of ghettos.
- Protection of Natura 2000 areas and the areas on the UNESCO World Heritage List, as well as other protected areas.
- Designation of buildings and environments for preservation.



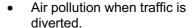


11.5: By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations.

- Risk of flooding and adaptation to rising sea levels for residents in coastal areas.
- Climate protection of projects against storm surges and cloudbursts.



11.6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.

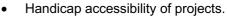


- The amount of household and industrial waste from construction and operation of activities.
- Utilization of recycled products instead of new materials.



11.7: By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities.

- Access to recreational and green areas during urban development, also for persons with disabilities.
- Recreational areas designed to prevent crime.





11.a: Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning.

- Distribution of workplaces across central and peripheral areas.
- Transport of internet, energy, district heating, persons, and goods etc. across central and peripheral areas.



- 11.b: By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.
- Comprehensive planning for sustainable cities and urban areas.
- Risk management in i.e., municipal, and local plans in relation to climate change and disasters.
- Ecosystem-based approaches to shared resources, such as within watersheds and along coastlines.







12.2: By 2030, achieve the sustainable management and efficient use of natural resources.



12.3: By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including postharvest losses.



12.4: By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.



12.5: By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.

- Effects of utilizing raw materials from land, sea and underground.
- Using renewable resources (for example wood) when building new infrastructure.
- Recycling of waste materials and secondary raw materials.
- Construction of buildings in materials with sustainability certification, such as DGNB.
- Resource and waste management, with, for example, a focus on minimizing household waste.
- Sortation and collection of biowaste from households.
- Recycling and high-value utilization of biowaste.
- Chemical consumption and management in construction and operation with negative environmental impacts through the production, consumption, or disposal.
- Use of green, yellow, red or black chemicals with, for example, offshore activities.
- Storage and management of oil products and other chemicals.
- Reduced waste generation through industrial symbioses.
- Selection of materials for new infrastructure with a focus on recycled materials and reduction of CO₂.
- · Ressource and waste planning.





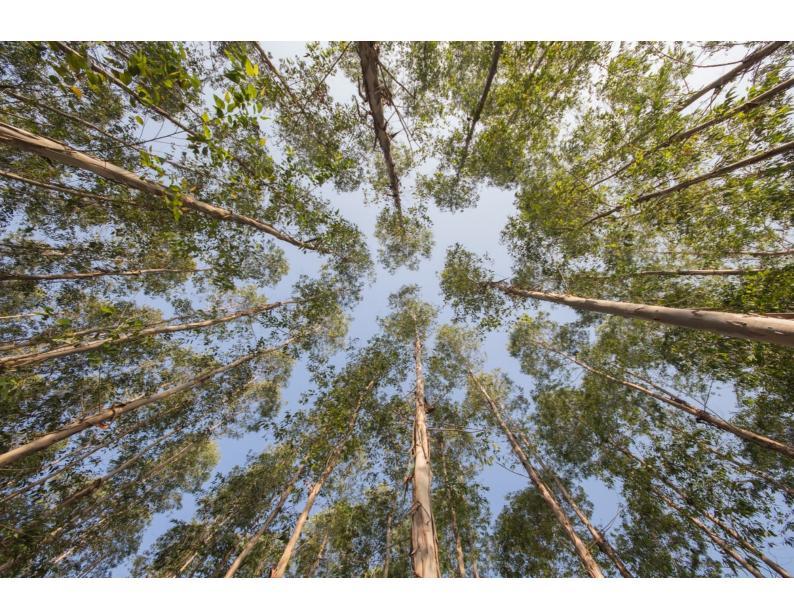
12.6: Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle.

 Contribution to sustainability and the fulfillment of SDGs is described in the SEA and EIA respectively.



12.7: Promote public procurement practices that are sustainable, in accordance with national policies and priorities.

- Using total costs as an economic parameter.
- Purchasing eco-labelled products.
- Implementation of green and sustainable tenders based on environmental assessment.







Take urgent action to combat climate change and its impacts.





13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.



13.2: Integrate climate change measures into national policies, strategies, and planning.

- Adaptation against the risk of rising water levels (rain, groundwater, and seawater).
- Organization of urban spaces and buildings to accommodate more extreme weather conditions (for example, increased temperatures).
- Risk management and climate adaptation planning.
- Integrated measures for climate change mitigation and adaptation in, for example, municipal and local planning.







Conserve and sustainably use the oceans, sea, and marine resources for sustainable development.



14.1: By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.



14.2: By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.



14.3: Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels.



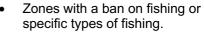
14.4: By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.

- Water quality as a result of construction on sea territory.
- Water quality as a result of discharge from land and vessels.
- Accidental pollution through oil spills, etc. from ship traffic with transport of CO2.
- Protection of coastal ecosystems when constructing, for example, harbor areas and ports.
- Coastal developments for ecosystem services.
- Replenishment of sea territory.
- Management of the risk of acidification from accidental CO2 emissions from CO2 storage under the seabed.
- Regulation of the type and incidence of fishing activity in the case of marine planning or construction of a new harbor area.

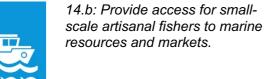




14.5: By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information.



 Coastal morphology that changes due to shipping.



 Restrictions on fishing opportunities from construction on sea territory.







Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

Examples from EA



15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains, and drylands, in line with obligations under international agreements,

- Protected nature, including Natura 2000, with construction that leads to land use change or other impacts on nature.
- Compliance with water body plans on land.



15.2: By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.

- Felling of forests in the case of construction that reduce forest areas.
- Designation of areas for forest compensation.
- Multifaceted afforestation.



15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradationneutral world.

- Cleanup in the case of soil pollution.
- Redirection of surface water to suitable areas to prevent flooding and drought.



15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species.

- Impact on Natura 2000 areas as well as breeding a resting areas for Annex IV species when constructing and operation new roads.
- Preservation or allocation of nonprotected habitats, for example, dispersal corridors and nature types that are not protected by the Nature Protection Act.





15.8: By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species.



15.9: By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts.

- Nature conservation to combat invasive species.
- Use of naturally native species in planting plans.
- Initiatives in operation and nature protection plans.
- Design and planning that limit interventions in existing ecological values
- Initiatives in project development and planning, such as infrastructure projects that can increase ecological values.









Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels.

Examples from EA



16.1: Significantly reduce all forms of violence and related death rates everywhere.

 Design and planning that promotes security and safety for especially urban areas and infrastructure.





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environmental topic	flora, fauna and biodiversity	population	human health	soil	land	water	air	climatic factors	material assets	landscape	cultural heritage	major accidents and/or disasters	ressource efficiency
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besluttet at arbejde mod en bæredygtig fremtid. De 169 delmål gør Verdensmålene konkrete og















Innovation Fund Denmark

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ENERGINET



Danmarks Miljøportal

Data om miljøet i Danmark



Technical University of Denmark





MiljøministerietDepartementet







